

**REMARKS**

Claims 1-11, 13-16 and 19 are pending in this application. By this Amendment, claims 1, 15 and 16 are amended and claim 12 is canceled, without prejudice to or disclaimer of the subject matter contained therein. No new matter is added.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration as the amendments amplify issues previously discussed throughout prosecution and during the August 10 personal interview; (c) satisfy a requirement of form asserted in the previous Office Action; and (d) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to a clarified Patent Office position provided during the August 10 personal interview. Entry of the amendments is thus respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representatives by Examiner Kiss in the August 10 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

Applicants also again acknowledge the indication that all prior art rejections have been withdrawn. Thus, the application should be in condition for allowance upon overcoming the outstanding rejections under 35 U.S.C. §§112 and 101.

**I. Formal Matters**

The Office Action rejects claims 15 and 16 under 35 U.S.C. §112, second paragraph. Claims 15-16 are amended to remedy the noted formalities. As discussed and agreed upon during the personal interview, these claims are now concise and definite.

In particular, claim 15 is amended to recite "the computer readable storage device."

Support for the change can be found, for example, on page 44, line 11, page 5, lines 2-4.

Claim 16 is amended to recite "a computer system."

Withdrawal of the rejection is respectfully requested.

## **II. Pending Claims Define Statutory Subject Matter**

The Office Action rejects claims 1-16 and 19 under 35 U.S.C. § 101 for allegedly not being directed to statutory subject matter. Applicants respectfully disagree.

As clearly recognized by the Examiner in the Final rejection, even abstract ideas and mathematical formulas may be eligible patentable subject matter if there is a practical application that has a "useful, tangible, and concrete result." As clarified during the personal interview, the Examiner's main point of contention is that the claims do not have a useful result and instead appear to only be a "determination based upon another determination" (Final Rejection, pg. 3, last paragraph).

As discussed during the August 10 personal interview, independent claims 1, 15 and 16 are amended to clarify the practical application and the "useful, tangible and concrete tangible" results achieved by the recited method, article of manufacture and system. In particular, method claim 1 is revised to clarify that it solves a computational related problem relating to a data structure that represents an expression. Additionally, method claim 1 recites, *inter alia*, "inputting a computer-readable arbitrary complex data structure representing an expression" (such as a Boolean expression or a pattern matching expression); "inputting the programming language statement, including the first and second sub-statements, that acts on the data structure to solve a computational related problem, one of the first and second sub-statements being a declarative statement and the other being an imperative statement"; evaluating the sub-statements; and "outputting the evaluation results of the programming language statement to solve the computational related problem relating to

the expression expressed in the arbitrary complex data structure." Independent article and system claims 15 and 16 are similarly amended.

These changes are fully supported, for example, by the Figures, page 2, lines 11-31, page 3, lines 28-35, page 5, lines 1-7, page 8, lines 10-20, page 28, lines 20-26, page 29, line 1 to page 32, line 21, page 33, lines 1-45, page 36, lines 13-26, page 38, lines 14-28, and page 39, lines 1-30. No new matter is added.

As clearly evidenced by the amended claims, each claim now recites a specific real-world data structure representing an expression as an input that is operated on (see Fig. 1, page 5, lines 1-7, page 8, lines 10-20, and page 29, lines 1-8). As indicated on page 32, lines 11-15, the expressions may be, for example, pattern matching expressions or Boolean expressions. These data structures are operated on by the evaluation of the bi-valuation programming language statement and the evaluation result is output to solve a computational related problem associated with the expression.

For example, the specification indicates one such practical application uses the method for pattern matching of XML document strings (page 32, lines 11+) or to manage a database and extract relevant data (page 24, line 20+). These are real-world practical applications that have "useful, concrete and tangible results" because they evaluate or operate on a particular data structure, such as an XML document string, and output a result, such as an extraction of relevant matched patterns or an indication that there is or is not a match. Thus, it is believed that the claims fully meet all of the statutory requirements for eligible subject matter.

In particular, as set forth in *AT&T Corp. v. Excel Comm. Inc.*, 172 F.3d 1352, 1358-59, 50 USPQ2d 1447, 1452 (Fed. Cir. 1999), the focus of the analysis is on whether "the final result achieved by the claimed invention is useful, tangible and concrete." As recited in the pending claims the final result is "useful" because it is specific, substantial, and credible (i.e.,

it can enable pattern matching of complex arbitrary data structures with reduced complexity language statements). The final result is also "tangible" because it sets forth a "real-world" result, such as a pattern match of an expression in a specific real-world text string within a document or an indication that there is a match in an output form to solve a particular computational related problem. The final result is also "concrete" because it is substantially repeatable. That is, the process may act on the same data structure and output the same repeatable output pattern or result of comparison (i.e., indication of pattern match).

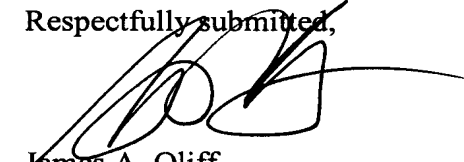
Thus, the subject matter of independent claims 1, 15 and 16 is not merely an expression of a mathematical formula or abstract idea, but an expression of specific, real-world, practical applications that have useful, tangible and concrete results. The various claims also are useful because they enable evaluation of arbitrary complex data structures through use of bi-valuation, whereas typical conventional programming language statements were either imperative or declarative and could address either specific or abstract detail, but could not readily address intermediate levels of abstraction. Because of this, the inventive method, article of manufacture and system are able to address the complexities without the excessive programming overhead associated with use of an imperative language or the inabilities of a declarative language to address the complexities (page 1, line 20 to page 2, line 33).

Accordingly, the subject matter of independent claims 1, 15 and 16 and claims dependent therefrom is directed to statutory subject matter. Withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-16 and 19 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff  
Registration No. 27,075

Stephen P. Catlin  
Registration No. 36,101

JAO:SPC/jnm

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**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

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